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IS 10683 (1983): Khurpi [FAD 21: Farm Implements and Machinery]



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“Knowledge is such a treasure which cannot be stolen”



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IS : 10683 - 1983

*Indian Standard*  
SPECIFICATION FOR  
*KHURPI*

UDC 631.315.4 KHURPI



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NEW DELHI 110002

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# Indian Standard

## SPECIFICATION FOR

### KHURPI

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( *Continued on page 2* )

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# *Indian Standard*

## SPECIFICATION FOR *KHURPI*

### 0. FOREWORD

**0.1** This Indian Standard was adopted by the Indian Standards Institution on 31 October 1983, after the draft finalized by the Horticultural Equipment Sectional Committee had been approved by the Agricultural and Food Products Division Council.

**0.2** *KHURPI* is a hand tool used for weeding purposes in vegetable gardens and for other crops. This tool is mostly used by a person in squatting position. The weeds are either cut on the ground level or removed from the root zone by the blade of the *KHURPI*. This standard stipulates various quality parameters for a *KHURPI*.

**0.3** The figure in the standard is given only as a typical illustration and should not be considered as suggestive of any standard design.

**0.4** In preparation of this standard assistance has been derived from Central Institute of Agricultural Engineering ( ICAR ), Bhopal and Passi Mechanical Works, Ludhiana.

**0.5** For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS : 2-1960\*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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### 1. SCOPE

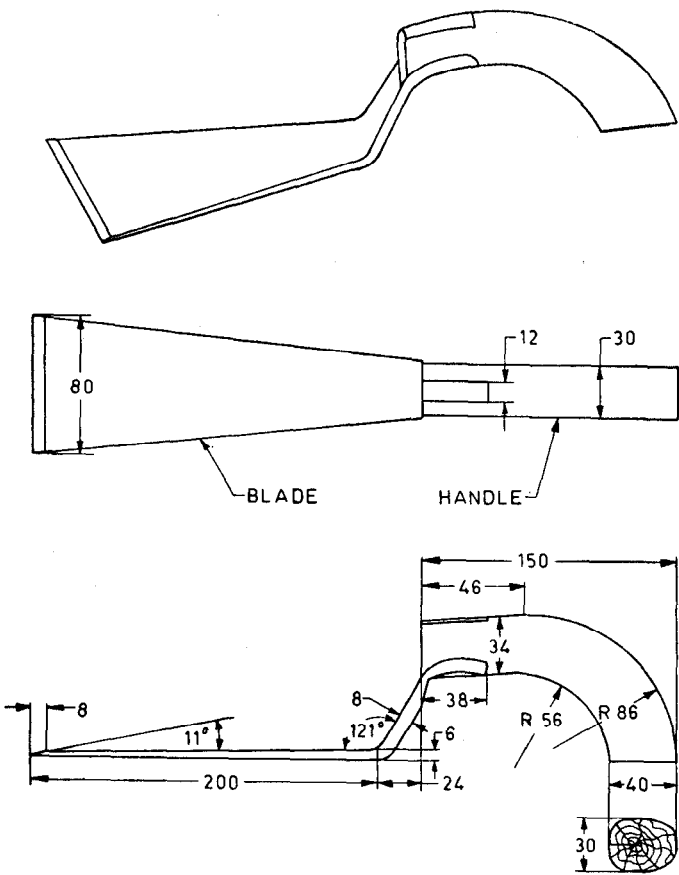
**1.1** This standard specifies material, dimensional and other requirements for *KHURPI*.

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\*Rules for rounding off numerical values ( *revised* ).

2. NOMENCLATURE

2.1 The nomenclature of various parts of the *KHURPI* shall be as given in Fig. 1.



All dimensions in millimetres.

FIG. 1 *KHURPI*



### 3. MATERIAL

**3.1 Blade** — The blade of the *KHURPI* shall be manufactured from carbon steel or alloy steel.

**3.1.1** The chemical composition of the carbon steel shall be as follows:

- a) Carbon 0.5 to 0.8 percent,
- b) Manganese 0.5 to 0.9 percent,
- c) Sulphur 0.5 percent, *Max*, and
- d) Phosphorus 0.05 percent, *Max*.

**3.1.1.1** Some of the typical carbon steels that may be used are: 55C4, 55C8, 60C4, 70C6, 75C6 and 80C6 [ *see* IS : 1570 ( Part 2 )-1979\* ].

**3.1.2** Alloy steel preferably conforming to grade 16NiCr2Mo20, 37Si2Mn90 or 37Mn2 ( *see* IS : 4367-1967† ) should be used.

**3.2 Handle** — Timber ( *see* Appendix D of IS : 620-1975‡ ) shall be used.

**3.3 Rivets** — Mild steel ( *see* IS : 226-1975§ ) shall be used.

### 4. HARDNESS

**4.1** The *KHURPI* shall be supplied either in hardened or unhardened condition as specified by the purchaser. When supplied in hardened condition, it shall have a hardness of 370 to 470 HB ( 38 to 47 HRC approx ) measured within a distance of about 25 mm from the cutting edge.

### 5. DIMENSIONS

**5.1** Unless otherwise agreed to between the purchaser and the supplier, the dimensions of *KHURPI* shall be as given in Fig. 1. The tolerance for various dimensions shall be as given in IS : 2102 ( Part 1 )-1980||.

**5.2** The thickness of the blade at the cutting edge shall be 0.5 mm and at the end of blade 6 mm.

\*Schedules for wrought steels for general engineering purposes: Part 2 Carbon steels ( unalloyed steels ) ( *first revision* ).

†Specification for alloy and tool steel forgings for general industrial use.

‡Specification for general requirements for wooden tool handles ( *third revision* ).

§Specification for structural steel ( standard quality ) ( *fifth revision* ).

||General tolerances for dimensions and form and position: Part 1 General tolerances for linear and angular dimensions ( *second revision* ).

**5.3** The width of the blade at the cutting edge shall be 80 mm and shall gradually decrease to 32 mm at the end.

## **6. OTHER REQUIREMENTS**

**6.1** The *KHURPI* shall be forged. If desired by the purchaser, it shall also be hardened (*see 4.1*).

**6.2** The cutting edge of the blade shall be sharpened through grinding.

**6.3** The handle shall be fixed with the blade by flattening the blade end, giving curvature so as to cover at least 40 mm of the periphery of the handle. On the top, a steel piece which shall cover 25 mm of the perimeter shall be placed and blade, handle and top steel pieces shall be rivetted with two rivets of 5 mm nominal diameter.

## **7. TEST**

**7.1** The cutting edge of the *KHURPI* shall be tested by striking at least 6 hard blows, from a height of 150 mm, on a suitably shaped dry hard wood blocks of *babool*, tamarind, *haldu*, *bijasal*, *sal* and *sissoo*, across their grain. During and on completion of the test, the cutting edge shall not show any sign of damage.

## **8. WORKMANSHIP AND FINISH**

**8.1** The forging shall be free from cracks, seams, pits, burrs and other visual defects.

**8.2** The rivets shall be countersunk and flushed with the surface of steel blade at the bottom and steel piece at the top.

**8.3** The handle shall be smooth and shall have a suitable grip.

**8.4** The exposed metallic parts shall be coated with oil or grease for prevention of rust. The wooden handle shall be polished or lacquered.

## **9. MARKING AND PACKING**

**9.1 Marking** — Each *KHURPI* shall be marked with the following particulars:

- a) Manufacturer's name or recognized trade-mark ;
- b) Batch or code number, if any ; and
- c) Hardened or unhardened.

**9.1.1** Each *KHURPI* may also be marked with the ISI Certification mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution ( Certification Marks ) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

**9.2 Packing** — The *KHURPI* of same type shall be packed as agreed to between the purchaser and the supplier for safe handling in transit and storage.

## **10. SAMPLING FOR LOT ACCEPTANCE**

**10.1** Unless otherwise agreed to between the purchaser and the supplier, the method of sampling and criteria for conformity of *KHURPI* for lot acceptance shall be as given in 3 of IS : 7201-1974\*.

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\*Methods of sampling of agricultural machinery and tractors.

# INDIAN STANDARDS

## ON

### HORTICULTURAL EQUIPMENT

- 619-1979 Pruning and slashing knives, hooked and curved ( *second revision* )
- 621-1978 Forks for plantations and estates ( *first revision* )
- 2238-1979 Spades and *SEPRANGS* ( *first revision* )
- 2559-1978 Garden rake ( *first revision* )
- 2563-1978 Hedge shears, straight-edge type ( *first revision* )
- 3092-1982 Rubber draining and tapping knife ( *first revision* )
- 3093-1981 Deh, jungle cutting ( *first revision* )
- 3094-1982 Bill-hook ( *first revision* )
- 3108-1982 Pruning saw, straight and curved ( *first revision* )
- 3122-1982 Budding and grafting knife, combined ( *first revision* )
- 3494-1978 Pruning secateur ( *first revision* )
- 7825 ( Part 1 )-1975 Cylinder type hand lawn mower: Part 1 Wheel type
- 7825 (Part 2 )-1975 Cylinder type hand lawn mower: Part 2 Roller type
- 8179-1976 Garden dutch hoe
- 8942-1978 Orchard ladder
- 9575-1980 Power lawn mower, pedestrian-controlled cylinder ( reel ) type
- 9581-1981 Safety and operational requirements for pedestrian-controlled cylinder ( reel ) power lawn mowers